

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: CE205

Course Name: ENGINEERING GEOLOGY

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

- | | | Marks |
|---|---|-------|
| 1 | a) Define weathering of rocks. Explain the weathering by mechanical means. | (7) |
| | b) Describe any two laboratory test used for assessing intensity of weathering. | (4) |
| | c) Sketch the typical soil profile with a short description of each zone. | (4) |
| 2 | a) Define aquifer. Discuss the classification of aquifers. | (5) |
| | b) Relate porosity and permeability in aquifers. | (5) |
| | c) Explain any three methods to control sub-surface water during the constructions. | (5) |
| 3 | a) Elucidate any three geological classes of soils | (9) |
| | b) Explain the relevance of geology in construction engineering. | (6) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|---|-----|
| 4 | a) Describe any three physical properties which affect the strength of minerals. | (6) |
| | b) Explain: (i) Calcite (ii) Biotite (iii) Gypsum | (9) |
| 5 | a) Give an account of any two rock features that affect the strength of rock as foundation material | (6) |
| | b) Discuss the origin of igneous rocks and sedimentary rocks | (9) |
| 6 | a) How do earthquake waves help to understand the interior structure of earth? | (6) |
| | b) Write short notes on: (i) Basalt (ii) Marble | (9) |

PART C

Answer any two full questions, each carries 20 marks.

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|---|---|-----|
| 7 | a) Explain strike and dip with figures | (6) |
| | b) Describe any two geological factors considered essential in the construction of tunnels | (8) |
| | c) How are folds formed in rock? Discuss the significance of fold in selecting feasible sites for dam. | (6) |
| 8 | a) The dip amount and dip direction of two outcrop of a contact between limestone and sandstone, located at a distance of 500m apart, are $20^{\circ} / N150^{\circ}$ and | (5) |

21⁰/N330⁰. Identify the structure and its strike.

- b) What are contours? Draw a contour pattern (not on scale) representing a 60m high volcanic cone, with a dry crater of 25m deep, located along sea shore (use contour interval – 20m) (3)
- c) List the causes of soil erosion (12)
- 9 a) What are faults? Describe the parts of a fault with diagram. How do faults differ from joints (10)
- b) Describe any three types of mass wasting. (6)
- c) Discuss the causes of landslides in Kerala (4)
